

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
17 March 2005 (17.03.2005)

PCT

(10) International Publication Number  
WO 2005/023904 A1

(51) International Patent Classification<sup>7</sup>: C08G 79/02

(74) Agent: BARKER BRETTTELL; 138 Hagley Road, Edgebaston, Birmingham B16 9PW (GB).

(21) International Application Number:

PCT/GB2004/003730

(22) International Filing Date:

2 September 2004 (02.09.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0320496.3 2 September 2003 (02.09.2003) GB

(71) Applicant (for all designated States except US): RHODIA CONSUMER SPECIALTIES LIMITED [GB/GB]; Oak House, Reeds Crescent, Watford, Hertfordshire WD24 4QP (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DAVIS, Keith [GB/GB]; 3 Holly Close, Kinver, Staffs. DY7 6BP (GB). WOODWARD, Gary [GB/GB]; 6 Kelstern Close, Northwich, Cheshire CW9 5QR (GB). HARDY, Julie [GB/GB]; 27 Beaumaris Close, Dudley, West Midlands DY1 3LX (GB). CARMICHAEL, Kim [GB/GB]; 57 Gorseway, Whoberley, Coventry CV5 8BL (GB). OTTER, Graham [GB/GB]; 4 Bracken Grove, Catshill, Bromsgrove B45 1PB (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

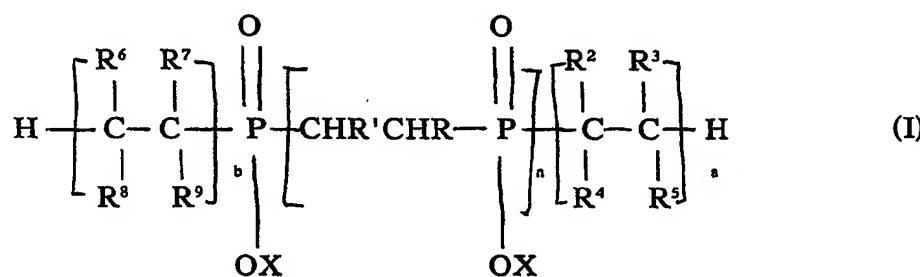
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL POLYMERS



WO 2005/023904 A1

(57) Abstract: A polymer of formula (I) wherein: R and R' are each independently selected from hydrogen, a hydroxyl group, a carboxyl group, an alkyl, aryl or alkaryl group or a hydroxy - or carboxy substituted - alkyl, aryl or alkaryl group provided that R and R' together have a total of less than 23 carbon atoms and n is greater than 1; X is hydrogen or a cation or an alkyl group; one of R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> is a phosphonate or a sulphonate group and the remainder of R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> are each independently selected from hydrogen, alkyl, aryl, alkaryl, alkoxy, hydroxy, hydroxy or carboxy substituted alkyl, phosphonate or sulphonate groups and a is from 1 to 5; R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup> are each independently selected from hydrogen, alkyl, aryl, alkaryl, hydroxy, alkoxy, hydroxy or carboxy substituted alkyl or carboxy groups and b is from 5 to 200. The polymer has uses in the fields of water treatment and corrosion inhibition.